ABSTRACT OF THE DISCLOSURE

An encryption apparatus performs high-speed and secure
signature creation and verification. In the encryption
apparatus, at least a shift register group composed of shift
registers for retaining values for arithmetic operations for
generating a hash value for use in public-key-cryptosystem
encryption processing, and shift registers for capturing a
resultant hash value, and a shift register group composed of
shift registers for retaining values for arithmetic
operations for performing public-key-cryptosystem encryption
processing and shift registers for capturing an arithmetic
result are used for each other. Hardware components to be
operated are changed in a time-sharing manner in accordance
with a processing mode.